Remarks/Arguments

1. Applicant thanks Examiner for his review of the present application. Claims 32 – 38 and 42 - 47 were pending at the time of examination. Examiner has rejected all pending claims under 35 U.S.C. § 103(a).

2. Examiner has presented a comprehensive litany of elements of the present claims, all of which he asserts are either disclosed in Chamberlain (4270320) or in the combinaton of disclosures of Chamberlain and Tuitt (3785066). Several statements from this litany that relate to key features of the invention as claimed will be discussed in greater detail.

3. In paragraph 2, Examiner asserts:

> "at least one line of the cone wall of a first conical element (figure 1 designated by part 44 left) extends **substantially** parallel to at least one line in the cone wall of an adjacent conical element (figure 1, the part designated by 36 bottom) so as to form a straight strut between the vertex of the first conical element and the adjacent conical element, ..." [Examiner's emphasis on word "substantially".]

The language of Claim 32 recites "at least one straight line of said cone wall of a first conical element extends substantially parallel to at least one straight line in said cone wall of an adjacent conical element ..." [Emphasis added.] It is important to note the limitation "straight." It is also important to note that the cone wall lines, as defined in claim 32, extend from the base to the vertex. Examiner failed to use the labels provided in Chamberlain when referring to certain lines in FIG. 1. Applicant assumes that the straight line in "36 bottom" Examiner refers to must be line 22, it being the only straight line in that element. This line 22 represents the radius of the sphere and actually extends from the center of the bottom horizontal plane of the structure, defined by the lower edge of elements 36, to the outer edge of the structure. It is most certainly not a

cone wall line. See figure 1 and column 3, lines 28 – 29. The "at least one line of the cone wall of the first conical element (figure 1 designated by part 44 left)" cited by Examiner must be the line designated AxR. Although it appears in this two-dimensional drawing that line 22 may be parallel to the line in "44 left", neither of these lines are in fact a "line of a cone wall," as recited in claim 32 of the present application, nor are they parallel, not even "substantially".

4. Applicant encloses with this paper Exhibit "A" which shows enlarged copies of Chamberlain figures 1 and 7. Applicant has added a line 1 and a line 2 in these figures, as an illustration of the fact that there can be no two lines of adjacent Chamberlain elements, each of the two lines extending through the apex of its respective element, that are parallel, because of the spherical structure. Any two lines on the surface of the elements will necessarily by arcs. The line AxR Examiner referred to is a chord. It is not a cone wall line, but for the sake of argument, let us leave that aspect aside and look at why no two chords, each one on adjacent element and passing through the apex of its respective element, can ever be parallel. In Figure 1, Chamberlain identifies the apex of element 44. Applicant has marked the location of the apex of element "36 bottom". A chord line, Line 1, is drawn from Apex 1 to the edge of the element 44 and a chord line, Line 2, drawn from Apex 2 to the edge of the element 36 bottom. In Figure 1, looked at straight on, these lines may appear to be parallel. They are, in fact, not parallel, and cannot be. Figure 7 is a cross-sectional view of the Chamberlain structure. For purposes of illustration, the figure has been enlarged. Apex points of adjacent elements have been marked on the inner shell, and chord lines drawn from the apex to a fastener point on the shell. Line 1 has been extended past the fastener point 1 to the point where it intersects Line 2. It should be clear to Examiner, that Line 1 and Line 2 will never be and can never be parallel to each other, because of the spherical shape of the elements. A chord line that passes through the apex of an element and that meets

up with the end of a chord line from an adjacent element, that also passes through the apex of its respective element, will always intersect. The angle of curvature of the elements will influence the angle at which the two lines approach each other. For example, the greater the curvature, the smaller the angle will be, that is, the more it will approach a 90-degree angle; the flatter the curvature, the greater the angle will be, that it, the more is will approach 180 degrees, but it will never be 180 degrees. These two chord lines, extended in space, will always intersect each other, that is, will always be at some angle smaller than 180 degrees to each other.

5. The Chamberlain elements include three types of panels, those having spherical, hexagonal, nonoverlapping portions (42), those having spherical pentagonal nonoverlapping portions (44), and one panel (46) having a spherical pentagonal nonoverlapping portion. All panels are the same size, regardless of what type they are. The only difference is in the "specific, predetermined geometrical configuration in which a plurality of fastener members are attached to the respective panels." See Col. 4, lines 66 – 68 and col. 5, lines 1 – 14.

6. Line AxR and its relationship to the partial spherical element is shown in FIG. 4. This line AxR is a calculation to determine the diameter of the circle 76 that is drawn on the panel. Once the circle is drawn and a point 79 on the circle 76 is located, the line BxR is used to determine where other points should be placed on the circle to mark points of a spherical pentagon. See col. 8, 1st full paragraph. Great circle distances (72) are then marked on the panel between the points of the hexagon or pentagon, a "great circle distance" being the shortest distance on the surface of a sphere between any two points and, by definition, an arc, i.e., a curved line. These points that are marked out on the sphere are the location points for fasteners to fasten adjacent spherical elements.

7. The "one line of the cone wall" referred to by Examiner is not a cone wall line, but a chord line that does not define the cone wall. Furthermore, nowhere is there a "straight strut" between vertexes (Applicant asserts that a spherical element does not have a "vertex", but, for the sake of argument, we will use this term here) on the Chamberlain structure.

8. Examiner goes on to say:

"the plurality of conical elements being arranged such that a distance and a direction of displacement between any two cone bases of adjacent placed conical elements being infinitely variable between a minimum limit and a maximum limit, ..."

9. Chamberlain goes to great lengths to explain that the panels must be precisely arranged and fastened to form the sphere. He begins his explanation of how to assemble the spherical elements to form a sphere with the words: "Furthermore the precise geometrical pattern according to which the panel members are to be assembled to one antoher, must be predetermined." See col. 5, lines 54 – 61. In column 6, lines 28 – 30, he says: "The oversized holes 60 are also located in strict adherence to the predetermined geometrical configuration." [Emphasis added.] The description of marking the panels in a manner that will enable one to assemble the spherical panels in strict adherence to the predetermined geometrical configuration is layed out in col. 6, line 45 through to col, 8, line 39.

10. Examiner asserts:

"a first amount of overlap between the first conical element and the second conical element forms a first strut distance and direction between the vertexes of the first conical element and the second conical element, a second amount of overlap between the first conical element and the third conical element forms a

second strut distance and direction between the vertexes of the first conical element and third conical element, a third amount of overlap between the first conical element and the fourth conical element forms a third strut distance and direction between the vertexes of the first conical element and the fourth conical element..."

The "strut" is defined in claim 32 as follows; "such that at least one straight line of said cone wall of a first conical element extends substantially parallel to at least one straight line in said cone wall of an adjacent conical element so as to form a straight strut between said vertex of said first conical element and said adjacent conical element ..." As recited in claim 32, the strut between vertexes is straight. There is not a single straight line of a cone wall in the entire Chamberlain structure. Chamberlain discloses no strut, consequently, there can be no strut distance.

11. Examiner asserts:

"the angular deficit Alpha of the conical element varies in magnitude from the angular deficit Alpha of an adjacent conical element (the angular difference results per the difference between the pentagonal vs. hexagonal), the plurality of conical elements including two groups of conical elements, each group having different magnitude of said angular defict Alpha, ..."

12. Applicant objects rigously to this assertion. Each panel in Chamberlain is the same size and has the same angular deficit. See Col. 5, lines 37 – 43, in which Chamberlain says that each panel has the same radius and the same curvature corresponding to that radius. The pentagonal and hexagonal lines drawn on the spherical elements are merely for determining the location of fasteners. They are not related in any way whatsoever to the angular deficit, nor to the size, of the element.

13. Many of the assertions made by Examiner with regard to Chamberlain are

incorrect. Applicant submits that a careful reading of the DESCRIPTION OF THE PREFERRED EMBODIMENTS in Chamberlain would clarify many of the misstatements made by Examiner. Chamberlain does NOT disclose "said cone wall defined by straight lines that extend from said base and intersect each other at said vertex, wherein said plurality of conical elements are arranged to form a shell, such that at least one straight line of said cone wall of a first conical element extends substantially parallel to at least one straight line in said cone wall of an adjacent conical element so as to form a straight strut between said vertex of said first conical element and said adjacent conical element, ..." See Claim 32.

14. Examiner relies on the disclosure of Tuitt to disclose a cone wall defined by straight lines that extend from the base and intersect each other at the vertex, and asserts that the combination of Chamberlain and Tuitt teaches "at least one straight line of the cone wall of a first conical elements [that] extends substantially parallel to at least one straight line in the cone wall of an adjacent conical element so as to form a straight strut between the vertex of the conical element and the adjacent element."

15. Neither Chamberlain nor Tuitt, either alone or in combination, teach, suggest, or motivate one skilled in the art to construct a structure such as the one claimed in claim 32 of the present application. Neither of them teaches the formation of a straight strut between vertexes, formed by cone wall lines of adjacent elements. Neither of them teaches or suggests the construction of a structure in which at least one straight line of a cone wall of a first element is parallel to a straight line of the cone wall of an adjacent element. Both Chamberlain and Tuitt teach away from dome-like structures having straight cone wall lines that form a strut between two adjacent vertexes, the lines that form the strut being parallel lines.

16. In order to render an invention obvious, the combined references must disclose each and every element of the claimed invention. Neither of the structures disclosed by Chamberlain or Tuitt has such lines. Thus, the combined teachings of Chamberlain and Tuitt do not render obvious the claimed invention of the present application.

17. Applicant has successfully traversed Examiner's arguments and shown that the structure claimed in claim 32 is distinguishable from the cited prior art and is not obvious in view of the cited prior art, either alone or in combination. Claim 32 is the sole independent claim of the present application and contains allowable subject matter. Hence, all other claims of the application, which depend directly or indirectly from claim 32, also contain allowable subject matter.

18. Applicant respectfully requests that Examiner withdraw all rejections against all claims of the present application and allow these claims.

19. This paper is filed within two months of the date of the Office Action.

Respectfully submitted,

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Enclosed:
Exhibit A (one drawing sheet)

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